

BALTIMORE CITY PUBLIC SCHOOLS

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Problem, Research, Action: Poverty Measurement Transition in Baltimore City Public Schools

Maryland Longitudinal Data System Center

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Session Objectives

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- **Problem** – Describe the district and school-based implications of the transition to the USDA’s Community Eligibility Provision (CEP)
- **Research** – Chronicle the research strategies and techniques used to understand and quantify changes in poverty measurement
- **Action** – Illustrate the iterative and transparent process City Schools took to educate, assuage and proactively anticipate stakeholder concerns

Background

City Schools at a Glance

SY 2017-18

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Student Enrollment (PreK-12): 80,592

- 42,864 students in grades pre-k–5
- 16,964 students in grades 6–8
- 20,764 students in grades 9–12

Student Demographics

- 79.4 percent African American; 10.4 percent Hispanic/Latinx; 8.0 percent White
- 55.1 percent low income (based on direct certification)
- 6.6 percent English language learner
- 14.7 percent Student with Disabilities

Full-Time Teachers: 4,871

FY 2018 Budget: \$1.31 billion

Schools and Programs: 177

- 1 pre-k/kindergarten school
- 49 elementary schools
- 75 elementary/middle schools
- 7 middle schools
- 14 middle/high schools
- 24 high schools
- 1 elementary/middle/high school
- 6 programs (not schools)

These include 34 charter schools, along with additional schools operated under contract through “alternative governance” structures



District transitioned to CEP for SY1516

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USDA's Community Eligibility Provision (CEP) allows **high-poverty school districts meeting a certain threshold** (40% or more students directly certified) to serve free meals to all students.

	SY11-12	SY12-13	SY13-14	SY14-15	SY15-16	SY 16-17
Lunch						
Total Meals Served	8,585,899	8,651,991	8,403,579	8,804,416	10,622,397	10,520,332
Average Daily Participation (ADP)	47,699	47,995	48,275	49,488	59,665	58,718
% of Enrollment*	56%	56%	57%	58%	71%	71%

*: % of Enrollment = (ADP ÷ Official Oct 31 enrollment)*100 [i.e. (ADP/82,555)*100]

SOURCE: MSDE

Measuring Poverty

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- The CEP transition prompted a methodology change for measuring economically disadvantaged (ED) students.
 - **FARMs (Free and reduced-priced meals) applications are no longer collected**
 - **Reduced income students are no longer included**
 - **Direct certification is used, but does not capture all students at the Free income threshold that were previously captured via FARMs-Free applications**
 - **Direct certification includes: Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance to Needy Families (TANF), Foster Care, and Homeless status**

Poverty Measurement Implications

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Funding

- Federal
 - Title I district funding (census-based)
- State
 - Compensatory education funding
- Local Allocations
 - Title I school allocations
 - Fair Student Funding (FSF) allocations

Reporting / Analysis

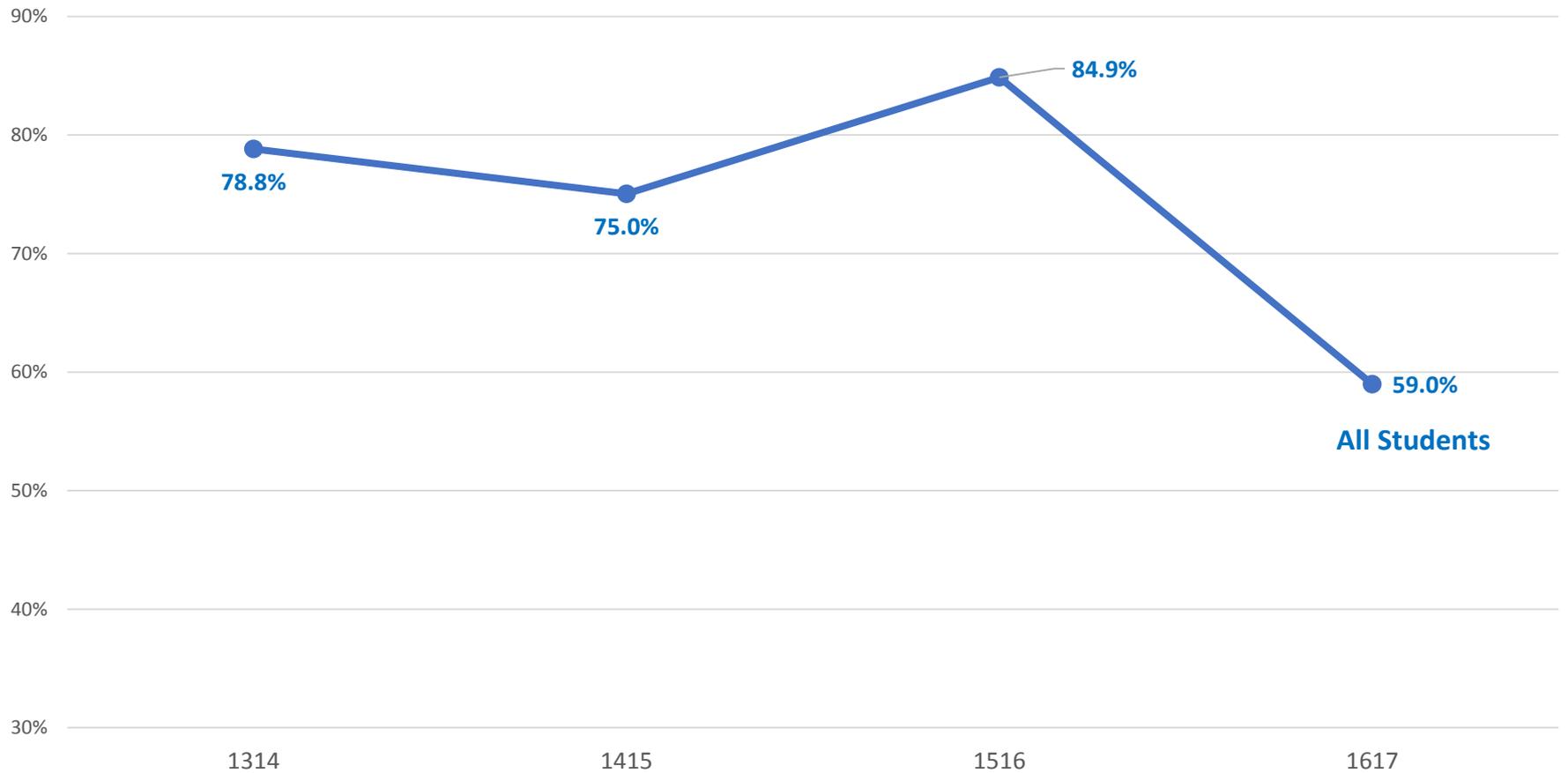
- State reporting
- Grant eligibility
- School comparisons
- Research

Problem

Districtwide ED Rate Trend

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% of Student Subgroup who are ED
by School Year



All Students

Impact of Measurement Change

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- City Schools was able to be "held harmless" by securing the before-transition poverty rate for state funding
- Per federal law, within district Title I allocations are based upon prior years' official poverty rates
- Individual school poverty rates were not able to be held constant to determine Title I poverty rankings
- Coincided with the district's funding strategy shift to factor in concentrations of poverty using a tiered Title I funding model

Stakeholder Feedback

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- Some schools had lost or were in danger of losing Title I status
- Some leaders felt their schools were not receiving fair share of Title I funds
- Anxiety about comparisons with “like” schools in high-stakes analyses
- Frustration that national/statewide comparisons would be difficult to make which could have grant-writing implications
- Principals with high Latinx and English Learner (EL) populations were experiencing enrollment increases in the same population areas that were negatively impacted by the poverty measurement change

Principals' Concerns

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Research, anecdotal experience, and community perspectives furthered beliefs that decrease in funding was due to the measurement change.

Concerns highlighted included:

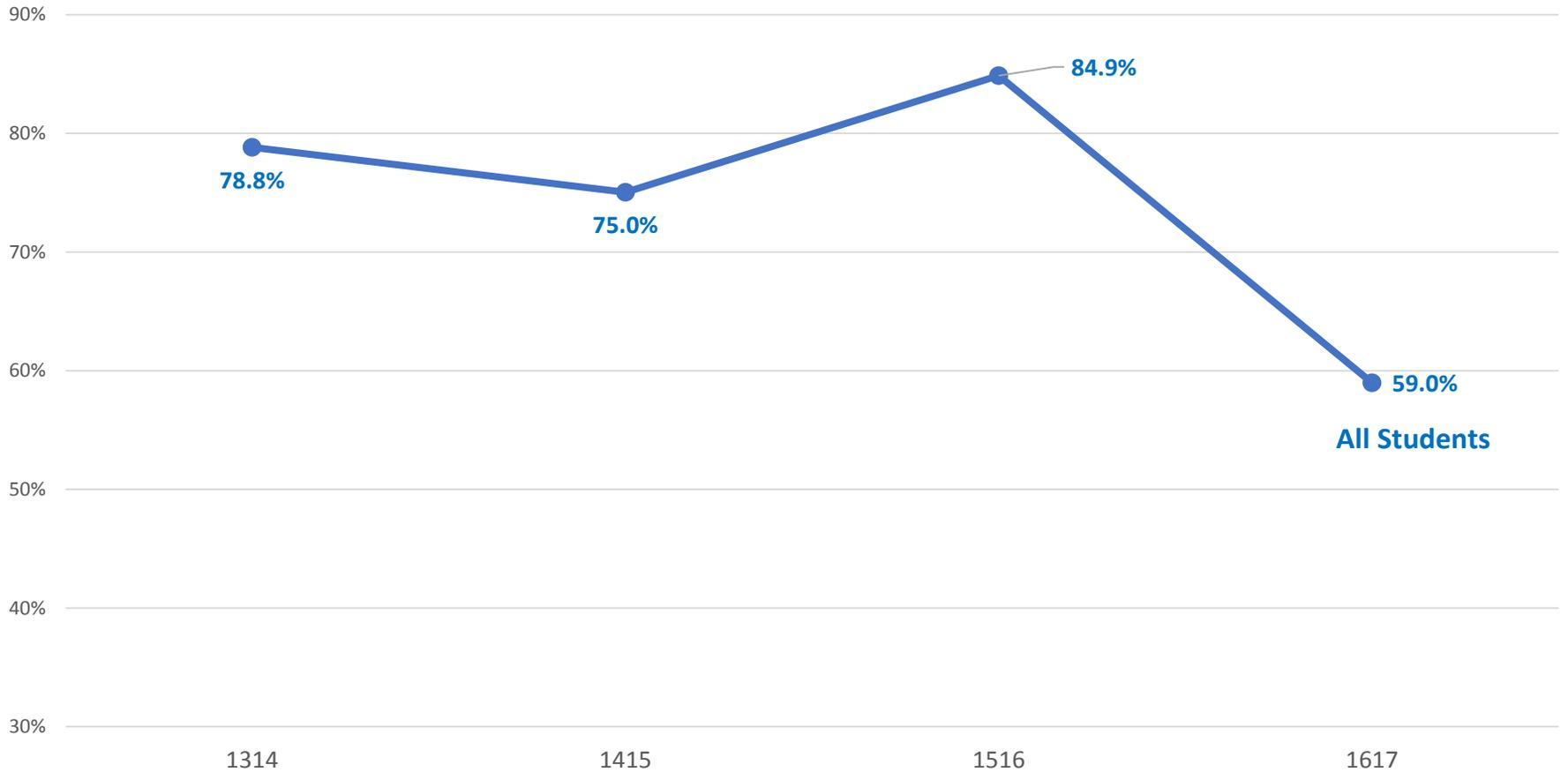
- Whole families not being counted because FARMs applications were no longer being collected
- Growing Hispanic/Latinx and EL populations that do not use services at same rates as other families
- High Hispanic/Latinx and EL population schools affected by change

Research

Districtwide ED Rate Trend

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% of Student Subgroup who are ED
by School Year

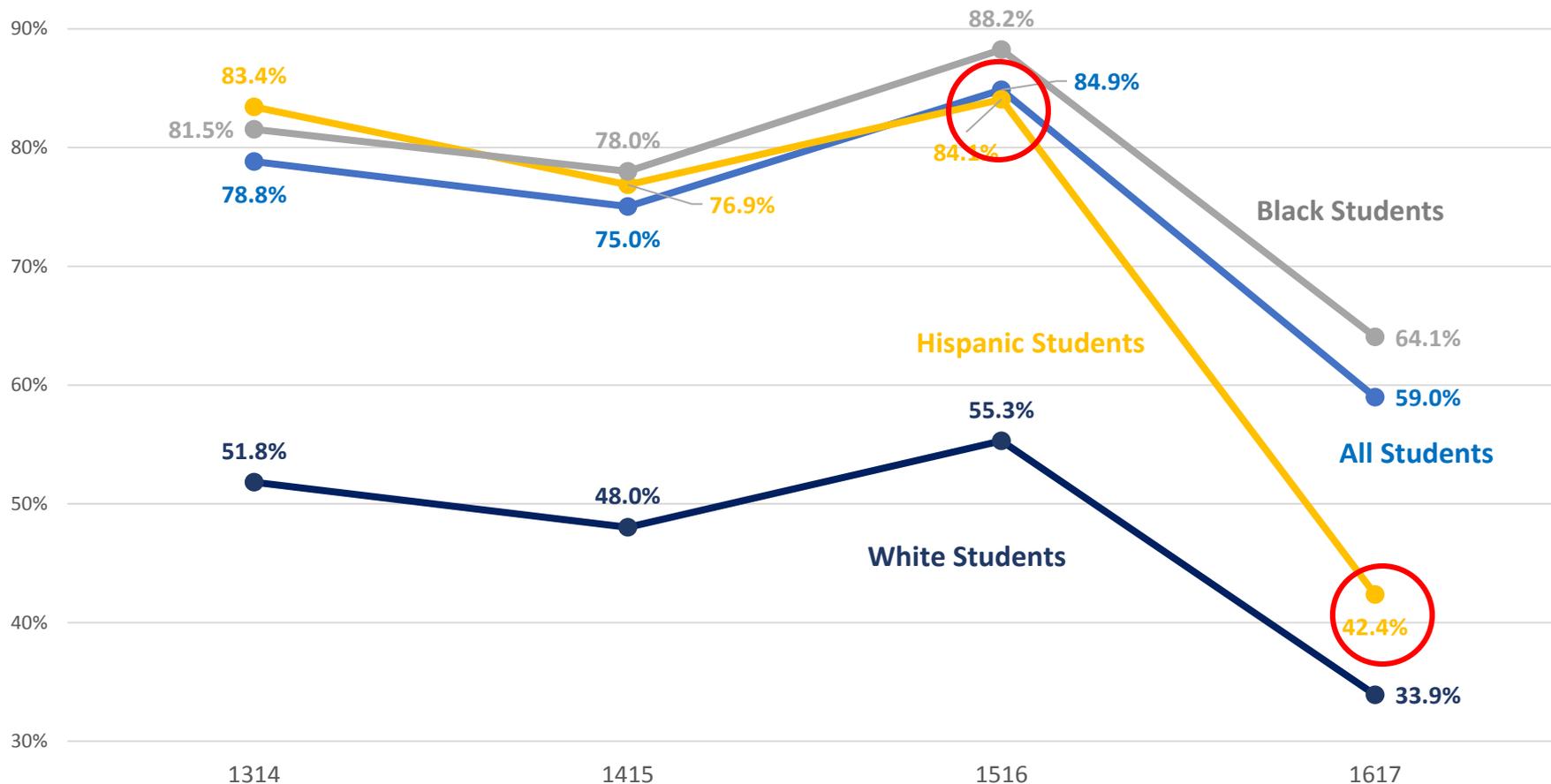


All Students

Hispanic students were disproportionately affected by the change in ED measurement

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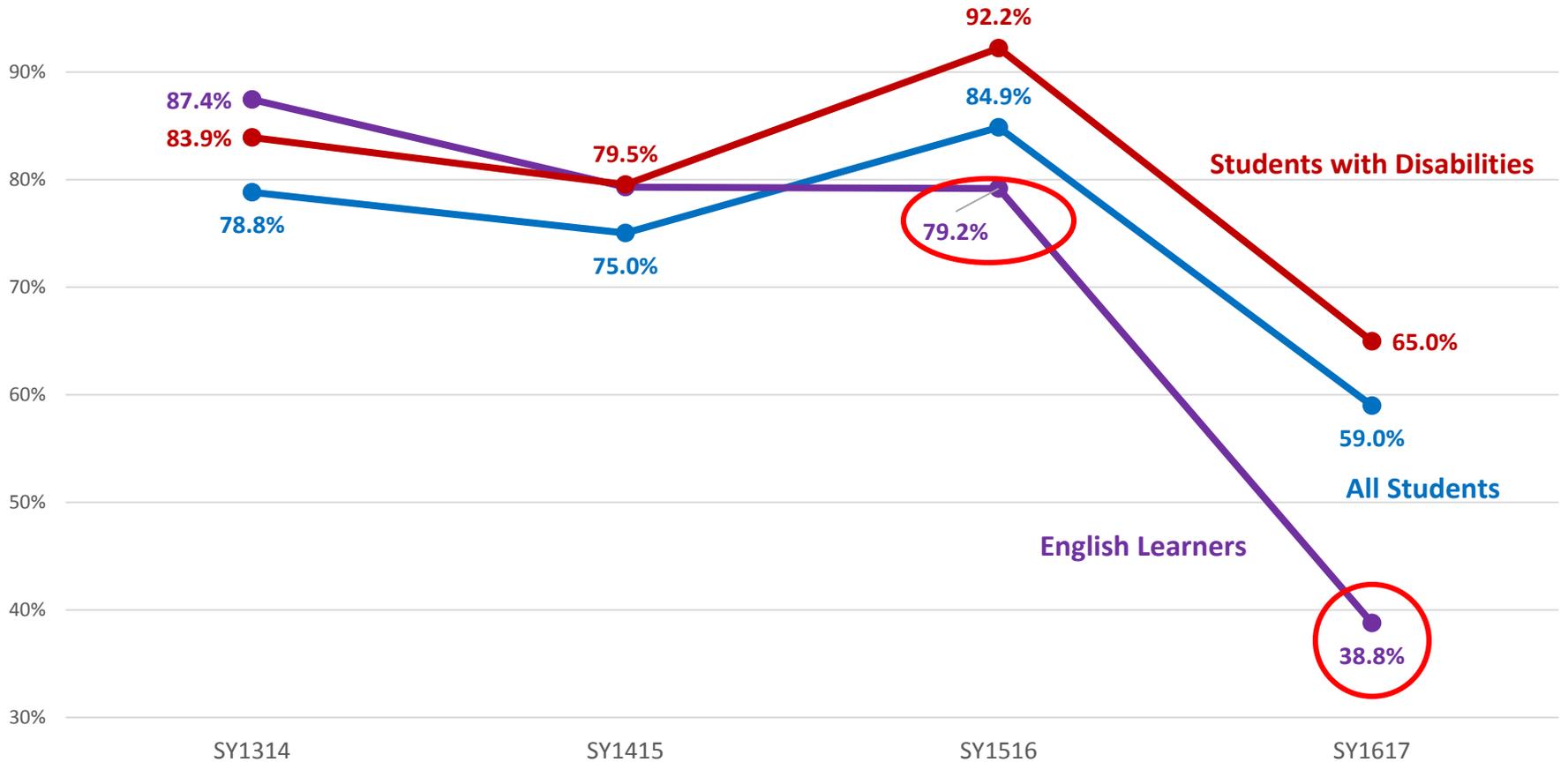
% of Student Subgroup who are ED by School Year



English Learners were also disproportionately affected by the change in ED measurement

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% of Student Subgroup who are ED By School Year



School	Gradeband	Title I Status	% Change in ED SY1314 - 1617	Title I Allocation Change SY1516 - 1718	% Hispanic SY1617	% SWD SY1617	% EL SY1617	% ED SY1617
School 01	E	SW	-35.1%	\$ (15,350.00)	2.9%	15.2%	0.7%	53.3%
School 02	EM	SW	-33.6%	\$ (58,976.00)	49.1%	11.4%	20.9%	55.6%
School 03	EM	SW	-33.6%	\$ (26,419.25)	67.6%	11.8%	37.6%	59.7%
School 04	EM	SW	-32.4%	\$ (41,080.25)	55.8%	13.4%	30.2%	57.0%
School 05	EM	SW	-30.7%	\$ 14,797.00	33.1%	15.1%	12.8%	57.4%
School 06	EM	SW	-30.0%	\$ (68,836.25)	78.6%	11.2%	47.5%	57.9%
School 07	EM	SW	-29.7%	\$ 513.00	0.4%	9.1%	0.0%	57.6%
School 08	EM	SW	-29.4%	\$ (32,144.25)	39.6%	13.0%	23.0%	63.4%
School 09	EM	SW	-29.1%	\$ (14,520.00)	35.8%	9.7%	24.6%	55.8%
School 10	E	SW	-28.1%	\$ 4,811.25	9.7%	18.3%	6.9%	67.4%
School 11	EM	Loss Title	-28.0%	\$ (145,078.00)	5.8%	15.4%	5.0%	41.9%
School 12	H		-27.5%	\$ -	35.3%	18.1%	34.6%	52.1%
School 13	EM	SW	-27.4%	\$ 6,360.75	68.4%	10.2%	38.7%	67.1%
School 14	EM	SW	-25.8%	\$ 65,463.25	29.2%	12.1%	20.2%	68.3%
School 15	EM	Loss Title	-25.4%	\$ (260,100.00)	42.6%	7.0%	15.6%	43.1%
School 16	E	SW	-25.4%	\$ (5,537.75)	3.3%	20.3%	0.0%	61.8%
School 17	E	SW	-24.8%	\$ 15,206.25	85.7%	8.6%	57.7%	68.6%
School 18	H	Loss Title	-24.5%	\$ (175,712.00)	30.7%	28.2%	16.1%	55.7%
School 19	E		-24.5%	\$ -	1.5%	15.1%	7.4%	32.4%
School 20	E	SW	-24.1%	\$ 14,305.75	2.2%	13.7%	11.8%	61.4%
School 21	E	SW	-24.0%	\$ (5,345.75)	27.3%	10.7%	19.9%	72.7%
School 22	E	Loss Title	-24.0%	\$ (91,324.00)	0.0%	11.1%	0.0%	48.9%
School 23	EM	SW	-23.8%	\$ 25,375.50	2.9%	12.0%	1.7%	55.3%
School 24	EM	Loss Title	-23.8%	\$ (136,986.00)	5.0%	14.8%	1.7%	48.0%
School 25	E	SW	-23.7%	\$ 32,114.75	5.4%	27.1%	0.0%	69.5%
School 26	E	SW	-23.5%	\$ 2,819.75	1.8%	13.9%	0.0%	55.9%
School 27	EM	SW	-23.4%	\$ (42,245.25)	31.8%	17.1%	14.4%	51.8%
School 28	EM	SW	-23.0%	\$ (14,285.50)	2.7%	14.2%	0.5%	62.8%
School 29	EM	SW	-22.4%	\$ 10,128.00	20.5%	17.3%	11.0%	56.7%
School 30	MH	SW	-22.3%	\$ 133,750.25	0.2%	29.9%	0.0%	67.1%
School 31	E	SW	-22.3%	\$ 20,302.50	32.6%	7.5%	32.6%	68.6%

How much were schools affected?

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- After confirmation that concerns were (mostly) valid principals of some schools argued:
 - **poverty rates should be higher or should be adjusted**
 - **higher rates would have resulted in more Title I funds allocated to their school**
- Need to base this decision-making in actual data and verifiable claims
 - **Need to know what poverty rates schools would have had if there were no CEP transition**
 - **Need to logically and transparently quantify the extent to which schools could have been affected**

How much were schools affected?

FARMs Rate Estimation

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- Create estimates of what poverty rates would have been if FARM forms had continued being collected.
- Used logistic regression to estimate the probability that each student *who was not directly certified* would have turned in a FARM form.
 - **Several different models considered (student vs. school level, different explanatory variables)**
 - **Final model used demographic information (race, disability status, English learner status) to predict a probability at the student level**
 - **Model trained on data from three years prior to CEP: 2012-13, 2013-14, 2014-15**

How much were schools affected?

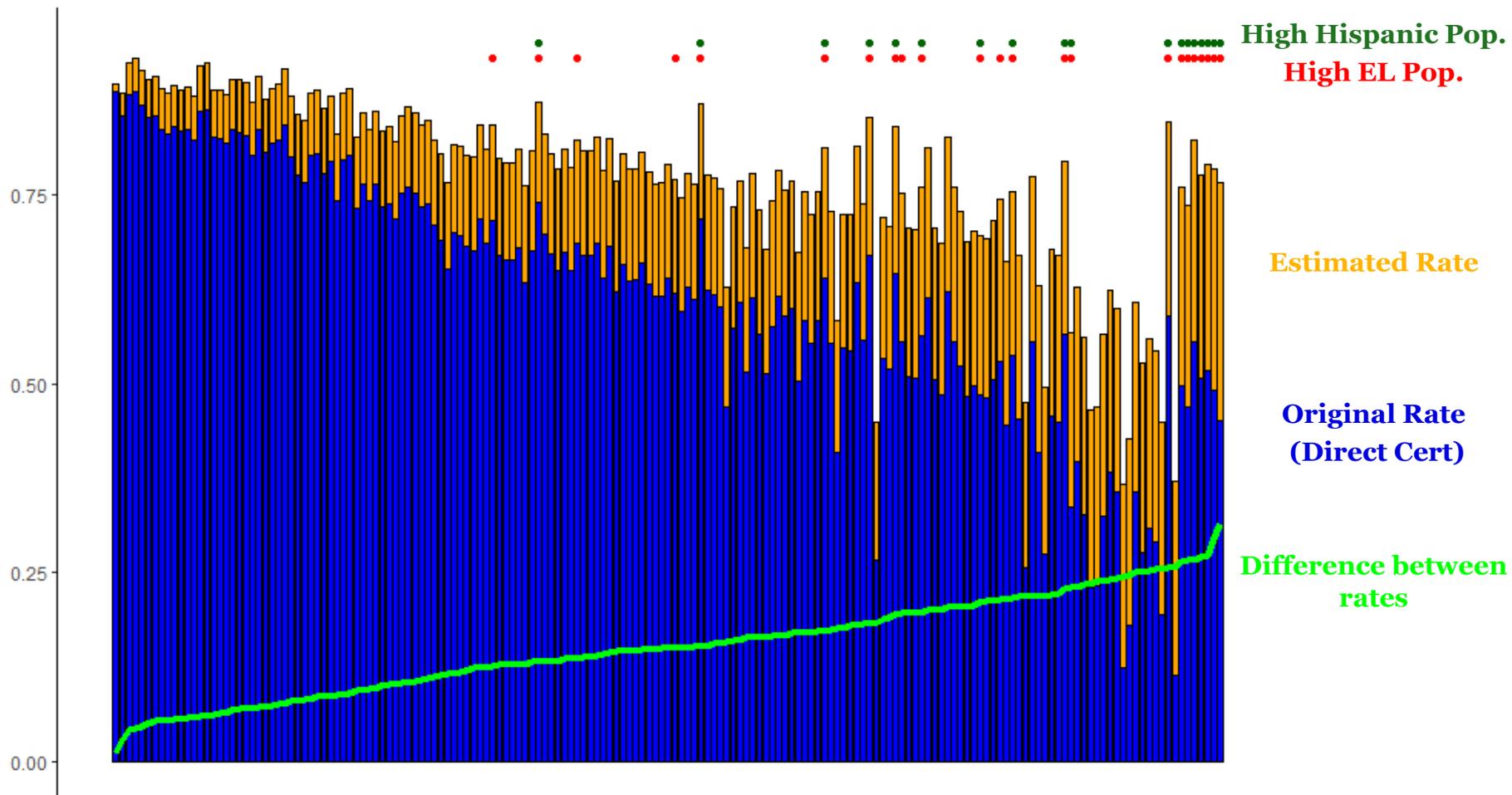
FARMS Rate Estimation

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- Used logistic model to predict FARM rates at schools in 2015-16 and 2016-17, after CEP implementation.
- Probabilities were summed at the school level and added to the counts of students already directly certified to create new rate estimates.
 - **New Estimate = Already directly certified + sum of predicted probabilities**
 - **Always higher than actual rates used**

How much were schools affected? FARMs Rate Estimation

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How much were schools affected? FARMs Rate Estimation

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- The mean school poverty rate used in Title I allocations was 61.8%, whereas the mean estimated rate was 77.0%
 - Average increase of 15.2% estimated from form collection
 - Increase ranged from 1.1 to 31.5%
- High EL population schools (>10% enrollment) showed an average increase of 21.5%
- High Hispanic/Latinx schools (> 25% enrollment) showed an average increase of 22.9%

How much were schools affected?

Financial Impact

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- Title I allocations rely on a rank order of poverty rates within the district. Ranks changed significantly under new simulated poverty rates.
 - **A specific inclusion cutoff has to be established (no lower than 35%)**
 - **A tiered structure for the per pupil dollar amount was used to balance high poverty in a nonlinear fashion**
- Every year poverty rate data had to be examined, ranked, and placed into an allocation structure. This process was now re-run on estimated poverty rates to in turn estimate financial impact.
 - **Several tiered and non-tiered structures were considered**
 - **One model used an optimization to set a tiering structure that minimized change from the previous year (least squares minimization)**

Looking for a Solution: Real World Constraints

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- Estimated poverty rates and their associated financial impact via Title I had now been determined.
- Title I funds had already been allocated for the 2016-17 school year.
 - **Where would a solution come from?**
 - **Given a host of models and different tiering possibilities, which was appropriate (if any) to be used to correct for the measurement error?**
 - **How can this issue be avoided in the future?**

Action

Short Term Solution: One-time Allocation Adjustment

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- Problem: Schools needed money paid back to them to “make right” – but there was no longer any Title I money to give out
 - **Where could the money come from?**
 - **How could this be distributed through legitimate avenues?**
- Solution: Provided an additional EL weight in our general funding formula at enrollment adjustment in recognition of the disproportionate impact on high EL schools. |

Medium Term Solution: Fair Student Funding

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- Weight added to per pupil base to account for poverty
 - **Students just beginning to learn English are included in poverty weight**
 - Immigrant families are less likely to be enrolled in the government programs included in Direct Certification
 - Students with very limited English skills require additional supports

FSF “Poverty” Definitions

(1) FSF Poverty Rate: Title I Poverty Rate + [(10/31 WIDA < 2.5 not directly certified, backmapped to students on 9/30 file) ÷ (9/30 count of enrollment)]

(2) FSF Poverty Count: FSF Poverty Rate * Projected FY19 K-12 Base-Funded Enrollment

But none of these solutions actually fix the problem...

Longer Term Strategies: Forms?

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No real feasible reason for return to forms:

- Cost too high to justify the additional data collection, especially since the incentive to complete forms has gone away now that meals are being provided for free
- No guarantee that undercounted populations will utilize forms more
- Having alternative forms could have a negative impact on Compensatory Education (Comp Ed) funding

Longer Term Strategies: Get more students under direct certification

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- Historic FARMS/DC status – current students status’ over the past few years
- Met with Principals to explain student level info
- Explained how this information could be used to target which students to encourage to apply for services
- Encourage community partnership to get students certified

Longer Term Strategies: Advocacy for use of additional poverty data

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- Advocate for inclusion of Medicaid, WIC in Direct Certification
 - **Liaise with Community Partners**
 - **Talk to Representatives to influence change at State level**
 - Caveat - inclusion of Medicaid will help District as a whole, but may exacerbate the school level undercounting problem
- Continue to seek out other forms of poverty data that could be used to complement current data sources

COMMENTS OR QUESTIONS

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